

To: Guria, Peter[Guria.Peter@epa.gov]; Hiatt, Gerald[Hiatt.Gerald@epa.gov]
From: Black, Ned
Sent: Tue 8/11/2015 4:28:41 PM
Subject: RE: Additional Gold King Mine statement/update 8/10

No comment from me on HH risk; I defer to Gerry. Ecorisk wasn't mentioned in these messages; here's my opinion pasted below on the same August 5 & 6 data. I sent this to Randy yesterday. Bottom line is there may well have been significant toxicity to aquatic wildlife the first couple days; at this point anything which was going to die should already have done so.

I haven't run the following through the EU yet, but I wanted to respond to Rusty sooner. I looked at the data from August 5 & 6 posted on epaosc.org for the Upper Animas River. From the perspective of acute ecotoxicity of the water to fish, amphibians (frogs), and/or stream insects, the bad actors are zinc, copper, and cadmium, in that order. A second tier of poor actors is arsenic, chromium and mercury (Hg only in Cement Creek).

For these judgment calls I used the acute toxicity values instead of the lower chronic values since my understanding conceptual exposure model was a spike of metals followed by steady dilution. The acute values I used, which should not be viewed as endorsed by the EU yet, are (ug/L): As 340, Cd 2, Cr 16, Cu 2.3, Zn 120, and Hg 1.4.

My professional guess is that anything that was going to be killed has already died. I'm also professionally guessing that rivers in the area experience turbidity spikes on a regular basis during the monsoon (summer thunderstorm season) and that the biological community is used to hunkering down and rebounding from sedimentation events. So I think the toxicity from metals is likely the worst problem.

ned black, ph.d.

us epa r9

regional cercla ecologist

415-972-3055

Please be advised I currently have limited access to email when I am not in the office (e.g., on travel), therefore please be patient with any communication delays.

From: Guria, Peter
Sent: Tuesday, August 11, 2015 7:25 AM
To: Hiatt, Gerald; Black, Ned
Subject: FW: Additional Gold King Mine statement/update 8/10

Please verify this is accurate for me please. thanks

From: Allen, HarryL
Sent: Tuesday, August 11, 2015 7:22 AM
To: Harris-Bishop, Rusty; Manzanilla, Enrique; Blumenfeld, Jared; Strauss, Alexis; Kao, Jessica; Zito, Kelly; Guria, Peter
Subject: Fwd: Additional Gold King Mine statement/update 8/10

Risk message based on spill site data:

Low risk of human health effects from contact with or ingestion of river water (even considering a 30 day repeated exposure).

Low risk of adverse effects on livestock from water ingestion or contact.

pH is normal. Avoid orange colored water as a precaution. Always wash w soap and water after being in contact w river water.

Sent from my iPhone

Begin forwarded message:

From: "Cristiano, Gina" <Cristiano.Gina@epa.gov>
Date: August 11, 2015 at 2:15:13 AM PDT
To: Megan Crandall <mcrandal@blm.gov>, Donald Hoffheins <dhoffhei@blm.gov>, "Larry Wolk" <larry.wolk@state.co.us>, "Urdiales, Aaron" <Urdiales.Aaron@epa.gov>, "Ackerman, Joyce" <Ackerman.Joyce@epa.gov>, "Allen, HarryL" <Allen.HarryL@epa.gov>, "Allison Majure" <Allison.Majure@state.nm.us>, "Bahrman, Sarah" <Bahrman.Sarah@epa.gov>, "Bohan, Suzanne" <bohan.suzanne@epa.gov>, "bsmartinez@fs.fed.us" <bsmartinez@fs.fed.us>, "Buhl, Rick" <Buhl.Rick@epa.gov>, Butch Knowlton-LaPlata Co EM <knowltonbk@co.laplata.co.us>, "Card, Joan" <Card.Joan@epa.gov>, "Chavez, Luke" <Chavez.Luke@epa.gov>, "Copeland, Michael" <Copeland.Michael@epa.gov>, "Crossland, Ronnie" <Crossland.Ronnie@epa.gov>, "dariotti@utah.gov" <dariotti@utah.gov>, "david.kreutzer@state.co.us" <david.kreutzer@state.co.us>, "david.kurz@state.co.us" <david.kurz@state.co.us>, "Dhieux, Joyel" <Dhieux.Joyel@epa.gov>, "dietrich@utah.gov" <dietrich@utah.gov>, "director@sjcph.org" <director@sjcph.org>, "doug.jamison@state.co.us" <doug.jamison@state.co.us>, "dspangler@utah.gov" <dspangler@utah.gov>, "dwong@utah.gov" <dwong@utah.gov>, "egaddis@utah.gov" <egaddis@utah.gov>, "Eoc, Epahq" <Eoc.Epahq@epa.gov>, "Faulk, Libby" <Faulk.Libby@epa.gov>, "Foster, Althea" <Foster.Althea@epa.gov>, "Garcia, David" <Garcia.David@epa.gov>, "gary.baughman@state.co.us" <gary.baughman@state.co.us>, "Gleason, Michael" <Gleason.Michael@epa.gov>, "greg.nauble@state.co.us" <greg.nauble@state.co.us>, "Griswold, Hays" <Griswold.Hays@epa.gov>, "Hayes, Mark" <hayes.mark@epa.gov>, "Hestmark, Martin" <Hestmark.Martin@epa.gov>, "jason.king@state.co.us" <jason.king@state.co.us>, Joshua Allan - BIA <joshua.allan@bia.gov>, "Kahn, Lisa" <Kahn.Lisa@epa.gov>, "karin.mcgowan@state.co.us" <karin.mcgowan@state.co.us>, "KBousfield@utah.gov" <KBousfield@utah.gov>, "Kortuem, Patrice" <Kortuem.Patrice@epa.gov>, "kshelley@utah.gov" <kshelley@utah.gov>, "Land, Kelcey" <Land.Kelcey@epa.gov>, "Laura.Rendon@state.nm.us" <Laura.Rendon@state.nm.us>, Liane Jollon - San Juan Basin HD <ljollon@sjbhd.org>, "llamb@utah.gov" <llamb@utah.gov>, "Lloyd, Lisa" <Lloyd.Lisa@epa.gov>, "Logan, Paul" <Logan.Paul@epa.gov>, "Madigan, Andrea" <Madigan.Andrea@epa.gov>, "martha.rudolph@state.co.us" <martha.rudolph@state.co.us>, "McComb, Martin" <McComb.Martin@epa.gov>, "McGrath, Shaun" <McGrath.Shaun@epa.gov>, "meghan.trubee@state.co.us" <meghan.trubee@state.co.us>, "mjblanchard@fs.fed.us" <mjblanchard@fs.fed.us>, "Mohr, Mindy" <Mohr.Mindy@epa.gov>, "monica.sheets@state.co.us" <monica.sheets@state.co.us>, "Myers, Craig" <Myers.Craig@epa.gov>, "Mylott, Richard" <Mylott.Richard@epa.gov>, "Nattis, Randy" <Nattis.Randy@epa.gov>, "O'Connor, Darcy" <oconnor.darcy@epa.gov>, "Ostrander, David" <Ostrander.David@epa.gov>, "patrick.j.pfaltzgraff@state.co.us" <patrick.j.pfaltzgraff@state.co.us>, "Patrick.Longmire@state.nm.us" <Patrick.Longmire@state.nm.us>, R8 Documentation Unit Leader <R08_Documentation_Unit_Leader@epa.gov>, "Restivo, Angela" <Restivo.Angela@epa.gov>, "Russo, Rebecca" <Russo.Rebecca@epa.gov>, "Saldenha, Jasmine" <Saldenha.Jasmine@epa.gov>, "Sandoval, Joni" <Sandoval.Joni@epa.gov>, Sid

Caesar - BIA <sid.caesar@bia.gov>, "Sierra, Eddie" <Sierra.Eddie@epa.gov>, "Sisk, Richard" <Sisk.Richard@epa.gov>, "Smith, Paula" <Smith.Paula@epa.gov>, "Stavnes, Sandra" <Stavnes.Sandra@epa.gov>, "Stevenson, Peter" <Stevenson.Peter@epa.gov>, "Thomas, Deb" <thomas.debrah@epa.gov>, "tojohns@southernute-nsn.gov" <tojohns@southernute-nsn.gov>, "tyson.ingles@state.co.us" <tyson.ingles@state.co.us>, "Videtich, Callie" <Videtich.Callie@epa.gov>, "Ward, W. Robert" <Ward.Robert@epa.gov>, "warren.smith@state.co.us" <warren.smith@state.co.us>, "Way, Steven" <way.steven@epa.gov>, "wbaker@utah.gov" <wbaker@utah.gov>, "Webster, Susan" <webster.susan@epa.gov>, "Werner, Phillip" <Werner.Phillip@epa.gov>, "wr.roc@noaa.gov" <wr.roc@noaa.gov>, "Hardegen, Steven" <Steven.Hardegen@fema.dhs.gov>, "Myers, Richard" <Richard.Myers2@fema.dhs.gov>, "Jackson jr, Jesse" <Jesse.JacksonJr@fema.dhs.gov>, Megan Crandall <mcrandal@blm.gov>, Donald Hoffheins <dhoffhei@blm.gov>, "larry.wolk@state.co.us" <larry.wolk@state.co.us>, "Urdiales, Aaron" <Urdiales.Aaron@epa.gov>
Cc: "Freed, Chris" <Freed.Chris@epa.gov>
Subject: Additional Gold King Mine statement/update 8/10

All,

The following information is also being released:

EPA has compared the surface water quality data collected on August 5 and 6 to screening levels for human health developed by EPA. The screening levels for human incidental ingestion during recreation are based on an exposure duration totaling 60 days, 8 hours/day. The State of Colorado has developed screening levels for agricultural exposure. The screening levels for agricultural exposure are based on an exposure duration totaling 30 days.

Based on the data we have seen so far, EPA and ATSDR do not anticipate adverse health effects from exposure to the metals detected in the river water samples from skin contact or incidental (unintentional) ingestion. Similarly, the risk of adverse effects to livestock that may have been exposed to metals detected in river water samples from ingestion or skin contact is low. It is advisable to avoid areas with orange discoloration in the river water.

Although the pH levels between Cement Creek and Durango have returned to baseline levels washing with soap and water after contact with the river water is a sound public health practice to minimize exposure to the metals and bacteria that may be present in any untreated river water.

From: Cristiano, Gina

Sent: Monday, August 10, 2015 7:43 PM

To: Megan Crandall; Donald Hoffheins; 'larry.wolk@state.co.us'; Urdiales, Aaron; Ackerman, Joyce; Allen, HarryL; 'Allison.Majure@state.nm.us'; Bahrman, Sarah; Bohan, Suzanne; 'bsmartinez@fs.fed.us'; Buhl, Rick; Butch Knowlton-LaPlata Co EM; Card, Joan; Chavez, Luke; Copeland, Michael; Cristiano, Gina; Crossland, Ronnie; 'dariotti@utah.gov'; 'david.kreutzer@state.co.us'; 'david.kurz@state.co.us'; Dhieux, Joyel; 'dietrich@utah.gov'; 'director@sjcph.org'; 'doug.jamison@state.co.us'; 'dspangler@utah.gov'; 'dwong@utah.gov'; 'egaddis@utah.gov'; Eoc, Epahq; Faulk, Libby; Foster, Althea; Garcia, David; gary.baughman@state.co.us; Gleason, Michael; 'greg.naugle@state.co.us'; Griswold, Hays; Hayes, Mark; Hestmark, Martin; 'jason.king@state.co.us'; Joshua Allan - BIA; Kahn, Lisa; 'karin.mcgowan@state.co.us'; 'KBousfield@utah.gov'; Kortuem, Patrice; 'kshelley@utah.gov'; Land, Kelcey; 'Laura.Rendon@state.nm.us'; Liane Jollon - San Juan Basin HD; llamb@utah.gov; Lloyd, Lisa; Logan, Paul; Madigan, Andrea; 'martha.rudolph@state.co.us'; McComb, Martin; McGrath, Shaun; 'meghan.trubee@state.co.us'; 'mjblanchard@fs.fed.us'; Mohr, Mindy; 'monica.sheets@state.co.us'; Myers, Craig; Mylott, Richard; Nattis, Randy; O'Connor, Darcy; Ostrander, David; 'patrick.j.pfaltzgraff@state.co.us'; 'Patrick.Longmire@state.nm.us'; R8 Documentation Unit Leader; Restivo, Angela; Russo, Rebecca; Saldenha, Jasmine; Sandoval, Joni; Sid Caesar - BIA; Sierra, Eddie; Sisk, Richard; Smith, Paula; Stavnes, Sandra; Stevenson, Peter; Thomas, Deb; tojohns@southernute-nsn.gov; 'tyson.ingles@state.co.us'; Videtich, Callie; Ward, W. Robert; 'warren.smith@state.co.us'; Way, Steven; 'wbaker@utah.gov'; Webster, Susan; Werner, Phillip
Cc: Freed, Chris
Subject: Gold King Mine statement/update 8/10

The Gold King Mine Release statement/update for 8/10 is attached.

Thank you, Gina

Gina Cristiano

Emergency Response & Planning Coordinator

EPA Region 8

303-312-6688

